NETGEAR®

ProSAFE® 10-Gigabit Ethernet Smart Managed Switches

Data Sheet

XS712T, XS728T

Industry's first 10-Gigabit Smart Managed Switches, Purposely Designed for SMB with Cost-Effective 10GBase-T Connectivity and Advanced L2+/Layer 3 Lite Features

As a leading provider of network equipment for SMBs, NETGEAR® understands the importance of a reliable and high performance network to SMB customers. With the growth of virtualization, cloud-based services and applications like VoIP, video streaming and IP surveillance, SMB networks need to extend beyond simple reliability to higher speed and performance. The 10-Gigabit Smart Managed Switch series from NETGEAR presents the right solution for this requirement, delivering unprecedented non-blocking 10-Gigabit bandwidth at an affordable cost.

The NETGEAR ProSAFE® XS712T and ProSAFE XS728T are powerful Smart Managed Switches that come with either 12 or 24 10-Gigabit Copper ports and either 2 Combo SFP+ (XS712T) or 4 additional Dedicated SFP+ ports (XS728T) for 10G Fiber links. The NETGEAR 10-Gigabit Smart Managed Switches are purposely designed as a cost-effective way to provide 10G connections to 10G-capable servers and NAS (Network Attached Storage) systems. They can be used at the "center of a small business network" or as an aggregation/access switch in a larger organization including workgroup access, connecting to a 10-Gigabit NETGEAR ProSAFE M7100/M7300 Fully Managed Switch on one end and extending the 10G connections to the edge.

Highlights

Both the XS712T and XS728T Smart Managed Switches provide comprehensive L2+/Layer 3 Lite features in order to meet our customers' current and future needs on virtualization, converged network and mobility. Some of the main features include:

- Advanced VLAN features such as Protocol-based VLAN, MAC-based (Media Access Control) VLAN and 802.1x Guest VLAN
- Advanced QoS (Quality of Service) with L2/L3/L4 awareness and 8 priority queues including Q-in-Q
- Static Routing (including IPv6 on XS728T)
- Private VLAN
- Dynamic VLAN assignment
- IGMP and MLD snooping
- Advanced Security
- IPv6 for management, QoS and ACL

10-Gigabit Transition with Base-T

- 10GBase-T, like other Base-T technologies, uses the standard RJ-45 Ethernet jack
- It is backward compatible, auto-negotiating between higher and lower speeds – thereby not forcing an all at once network equipment upgrade
- CAT5/CAT5E are supported for Gigabit speeds up to 100 meters
- CAT6 twisted pair copper cabling supports 10-Gigabit speeds up to 45 meters
- CAT6A or newer CAT7 cabling will allow for up to 100 meter 10GBase-T connections

Designed as Core Switch for SMB Network

- 10G connection to 10G-capable servers and network storage
- Powerful L2+/Layer 3 Lite features make them the most cost-effective core switches for SMB and virtualization environment
- Future-proof your network with 10G bandwidth, advanced traffic management and comprehensive IPv6 Support
- Static routing helps to route internal traffic for more efficient use of network resources
- IGMP and MLD snooping provide advanced multicast filtering

Act as Aggregation Switch for Medium Sized Networks

- 10-Gigabit switches help to resolve the congestion issue between network edge and core, which is caused by the broader adoption of Gigabit-to-the-desktop
- 10-Gigabit Ethernet provides greater scalability than multiple Gigabit Ethernet links, resulting in a simplified and highly efficient network infrastructure
- Up to eight 10-Gigabit Ethernet links can be aggregated into a virtual 80-Gbps connection
- 10-Gigabit Ethernet reduces cabling complexity and uses existing cabling efficiently

Smart IT, not Big IT

- Easy-to-use Web-based management GUI makes setup and management simple
- Standard-based technology ensures interoperability with any standard-based devices in the existing network
- Dual firmware images improve reliability and uptime to your network
- Worry-free with NETGEAR ProSAFE LIFETIME Hardware Warranty*
- Minimal down-time with NETGEAR ProSAFE LIFETIME Next-Business-Day Replacement Warranty
- Get deployment assistance with 90-days Free 24x7 Advanced Technical Phone Support**
- LIFETIME 24x7 Online Chat Technical Support

Hardware at a Glance

	FRONT				REAR	
Model Name	Form-Factor	100/1000/10GBase-T RJ-45 Ports	1000/10GBase-X Fiber SFP+ Ports	Storage (image, config, log files)	Power Supply	Fans
XS712T	Rackmount	12	2 combo	n/a	1 internal PSU, fixed	2 internal, fixed fans
XS728T	Rackmount	24	4 dedicated	1 x USB	1 internal PSU, fixed	4 internal, fixed fans

XS712T: 12-port 10-Gigabit Smart Managed Switch

- 10 dedicated 10GBase-T copper ports supporting 10G/1G/100M speeds
- 2 combo copper/SFP+ Fiber 10G ports

XS728T: 28-port 10-Gigabit Smart Managed Switch

- 24 dedicated 10GBase-T copper ports supporting 10G/1G/100M speeds
- 4 dedicated 10GBase-X SFP+ Fiber 10G ports
- USB port (for software/firmware/configuration upload/download)

Software at a Glance

LAYER 2+ / LAYER 3 LITE FEATURES								
Management	IPv4 / IPv6 ACL and QoS	IPv4 / IPv6 Multicast filtering	Auto-VoIP, Auto-Video	EEE (802.3az) Auto-EEE	VLANs	Convergence	IPv4 Static Routing	IPv6 Static Routing
Web GUI (HTTPS), PC-Based Utility (SCC), RMON, SNMP	L2, L3, L4 Ingress	IGMP and MLD Snooping	Yes	Yes	Static, Dynamic, Voice, MAC, Protocol-based, Private VLANs	LLDP-MED, RADIUS, 802.1X	Yes (VLANs)	XS728T Only

Performance at a Glance

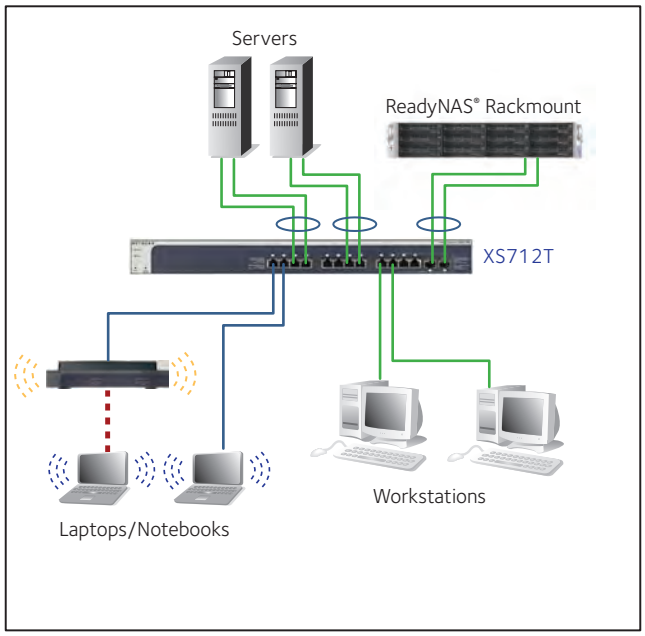
Model Name	Packet buffer	CPU	ACLs	MAC Address Table RP/NDP Table VLANs	Fabric	Latency	Static Routes	Multicast IGMP Group
XS712T	2Mb	600MHz 128M RAM 32MB Flash	100 ingress	32K MAC 1K ARP/NDP VLANs: 256	240Gbps line-rate	10GBase-T <6.606 µs SFP+ <2.979 µs	32 IPv4	1024
XS728T	3Mb	800GHz 512MB RAM 8MB SPI + 256MB NAND Flash	164 ingress	16K MAC 1K ARP/NDP VLANs: 512	560Gbps line-rate	10GBase-T <11.649 µs SFP+ <2.619 µs	64 IPv4 64 IPv6	512

Features at a glance

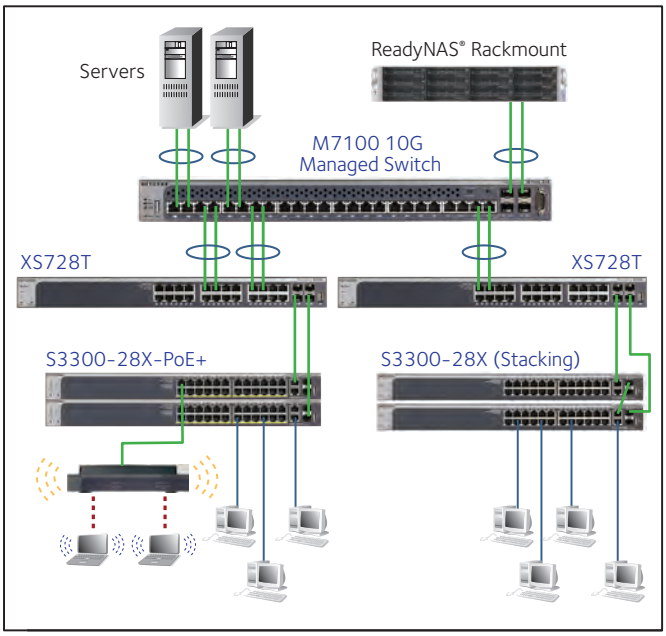
HARDWARE FEATURES	BENEFITS
10GBase-T connections	Support low-latency, line-rate 10G Copper "Base-T" technology with backward compatibility to Fast Ethernet and Gigabit Ethernet. Cost-effectively migrate current network to 10G capacity by utilizing the existing CAT5e/CAT6 RJ-45 short connections (up to 30m) and CAT6A/CAT7 connections up to 100m.
SFP+ 10G Fiber ports	Providing flexibility to uplink to 10G-capable core or aggregation switches that support fiber links. Backward compatible to Gigabit fiber.
USB Port (XS728T Only)	Quickly and conveniently upgrade or restore firmware or load configuration settings file.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for ongoing operation cost savings.
SOFTWARE FEATURES	**BENEFITS**
Comprehensive IPv6 Support for Management, ACL and QoS	Build current network with future in mind. Ensure investment protection and a smooth migration to an IPv6-based network without switch replacement.
Static Routing	A simple way to provide segmentation of the network with internal routing through the switch – reserving the router for external traffic routing only, making the entire network more efficient. IPv6 static routing support (XS728T only).
Robust security features: • 802.1x authentication • Port-based security by locked MAC • ACL filtering to permit or deny traffic based on MAC and IP addresses	Build a secured, converged network with all types of traffic by preventing external attacks and blocking malware while allowing secure access for authorized users.
Comprehensive QoS features: • Port-based or 802.1p-based prioritization • Layer 3-based (DSCP) prioritization • Port-based ingress and egress rate limiting	Advanced controls for optimized network performance and better delivery of mission-critical traffic such as voice and video.
Auto Voice and Auto Video	Automatic Voice over IP prioritization with Auto-VoIP simplifies most complex multi-vendor IP telephone deployments either based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address, providing the best class of service to VoIP streams (both data and signaling) over other ordinary traffic by classifying traffic, and enabling correct egress queue configuration. When deployed IP phones are LLDP-MED compliant, the Voice VLAN will use LLDP-MED to pass on the VLAN ID, 802.1P priority and DSCP values to the IP phones, accelerating convergent deployments.
IGMP Snooping and MLD Snooping	Facilitate fast receiver joins and leaves for multicast streams. Save cost and improve network efficiency by ensuring multicast traffic only reaches designated receivers without the need of an extra multicast router.
Protected Ports	Ensure no exchange of unicast, broadcast, or multicast traffic between the protected ports on the switch, thereby improving the security of your converged network. This allows your sensitive phone phone conversations to stay private and your surveillance video clips can be forwarded to their designated storage device without leakage or alteration.
DHCP Snooping	Ensure IP address allocation integrity by only allowing DHCP messages from trusted DHCP servers and dropping malformed DHCP messages with a port or MAC address mismatch.
Dynamic VLAN Assignment (RADIUS)	IP phones and PCs can authenticate on the same port but under different VLAN assignment policies. Users are free to move around and enjoy the same level of network access regardless of their physical location on the network.
Private VLAN	Private VLANs help reduce broadcast with added security.
Dual Firmware Images and Configuration Files	Dual firmware image and dual configuration file for transparent firmware updates/configuration changes with minimum service interruption.

Target Application

XS712T in SMB Network



XS728T in Medium-sized Network



10GE link GE link Wireless link

Why 10-Gigabit Switches and Why from NETGEAR?

NETGEAR offered the industry's first cost-effective 10-Gigabit Switches for SMBs and the leading provider for 10G solutions at affordable price points:

- Ideal for SMBs to use as the core switch, connecting to 10G-capable Servers and network storage.
- Cost-effectively expand 10G bandwidth from core switch in medium-sized networks to access switches which are equipped with 10G uplinks.
- Powerful feature sets with advanced L2+/Layer 3 Lite functions, enhanced security measures, static routing, dynamic VLAN assignment and IPv6 support.
- Improved usability for easier and smoother deployment of voice, video, and WLAN on the same converged platform.
- LIFETIME warranty on hardware, LIFETIME Next-Business-Day (NBD) replacement, LIFETIME tech support online chat, and 90-days Free Advanced Tech Phone Support* for peace-of-mind.

Technical Specifications

PRODUCT	XS712T	XS728T
100/1000/10GBase-T RJ-45 copper ports	12	24
SFP+ 1000/10GBase-X fiber ports	2 (combo)	4 (dedicated)
USB port	n/a	1
PERFORMANCE SPECIFICATION		
Packet buffer memory (Dynamically shared across only used ports)	2MB	3MB
Forwarding modes	Store-and-forward	
Bandwidth	240Gbps	560Gbps
Priority queues	8	
Priority queuing	Weighted Round Robin (WRR)	
MAC address database size	32K	16K
Addressing	48-bit MAC address	
Multicast groups	1024	512
Number of IPv4 static routes	32	64
Number of IPv6 static routes	n/a	64
Number of routed VLANs	256	512
Number of ARP cache entries	1024	
Number of DHCP snooping bindings	8K	1K
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs	164 shared for MAC, IP and IPv6 ACLs
Jumbo frame support	Up to 9K packet size	Up to 10K packet size
Acoustic noise level @ 25°C (dBA) (ANSI-S10.12)	49.7 dBA	41.6 dBA
Mean Time Between Failures (MTBF) @ 25°C	211,197 hours	514,977 hours
L2 SERVICES - VLANS		
IEEE 802.1Q VLAN tagging	Yes	
IP-based VLANs	Yes	
MAC-based VLANs	Yes	
Auto-voice VLAN	Based on phone's OUI bytes (internal database, or user-maintained) or protocols (SIP, H323 and SCCP)	
Auto-video VLAN	Yes	
Private VLAN	Yes	

Technical Specifications

PRODUCT	XS712T	XS728T
L2 SERVICES - AVAILABILITY		
Broadcast storm control	Yes	
IEEE 802.3ad - LAGs (LACP)	Yes	
IEEE 802.3x (full duplex and flow control)	Yes	
IEEE 802.1D Spanning Tree Protocol	Yes	
IEEE 802.1w Rapid Spanning Tree Protocol	Yes	
IEEE 802.1s Multiple Spanning Tree Protocol	Yes	
L2 SERVICES - MULTICAST FILTERING		
IGMP snooping (v1, v2 and v3)	Yes	
MLD snooping support (v1 and v2)	Yes	
IGMP snooping queries	Yes	
Block unknown multicast	Yes	
L2 SERVICES - DHCP		
DHCP client	Yes	
DHCP snooping	Yes	
L3 SERVICES - ROUTING		
IPv4 static routing	32	64
IPv6 static routing	n/a	64
VLAN routing	Yes	
Host ARP table	1024	
Router Discovery (IRDP)	Yes	No
Number of IP interfaces (port or VLAN)	15	32
LINK AGGREGATION		
IEEE 802.3ad - LAGs	Yes	
Manual LAG	Yes	
# of LAGs / # of members in each LAG	LACP (8 LAGs with max 8 members in each LAG)	
NETWORK MONITORING AND DISCOVERY SERVICES		
802.1ab LLDP	Yes	
SNMP	v1, v2c, v3	
RMON group 1,2,3,9	Yes	

Technical Specifications

PRODUCT	XS712T	XS728T
NETWORK SECURITY		
IEEE 802.1x	Yes	
Guest VLAN	Yes	
RADIUS-based VLAN assignment via .1x	Yes	
MAC-based .1x	600	
RADIUS accounting	Yes	
Access Control Lists (ACLs)	L2 / L3 / L4	
IP-based ACLs (IPv4 and IPv6)	Yes	
MAC-based ACLs	Yes	
TCP/UPD-based ACLs	Yes	
MAC lockdown	Yes	
MAC lockdown by the number of MACs	Yes	
IEEE 802.1x RADIUS port access authentication	Yes	
Port-based security by locked MAC addresses	Yes	
Network storm protection, DoS	Yes	
Broadcast, unicast, multicast DoS protection	Yes	
DoS attacks prevention	Yes	
QUALITY OF SERVICE (QOS)		
Access Lists	Yes	
L2 MAC, L3 IP and L4 port ACLs	Yes	
Rate limiting	Ingress and egress (egress only on interface queue page)	Ingress and egress
Port-based QoS	Yes	
Support for IPv6 fields	Yes	
DiffServ QoS	Yes	
IEEE 802.1p COS	Yes	
Destination MAC and IP	Yes	
IPv4 and v6 DSCP	Yes	
IPv4 and IPv6 ToS	Yes	
TCP/UDP-based	Yes	
Weighted Round Robin (WRR)	Yes	
Strict priority queue technology	Yes	
Auto-VoIP	Yes, based on protocols (SIP, H323 and SCCP) or on OUI bytes (default database and user-based OUIs) in the phone source MAC address	
Auto-Video	Yes	

Technical Specifications

PRODUCT	XS712T	XS728T
IEEE NETWORK PROTOCOLS		
• IEEE 802.3 Ethernet • IEEE 802.3u 100BASE-T • IEEE 802.3ab 1000BASE-T • IEEE 802.1Q VLAN Tagging • IEEE 802.3x Full-Duplex Flow Control • IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX • IEEE 802.3an 10GBASE-T 10 Gbit/s Ethernet Over Copper Twisted Pair Cable • IEEE 802.3ae 10-Gigabit Ethernet Over Fiber (10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-LX4)	• IEEE 802.3ad Trunking (LACP) • IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) • IEEE 802.1p Class of Service • IEEE 802.1D Spanning Tree (STP) • IEEE 802.1s Multiple Spanning Tree (MSTP) • IEEE 802.1w Rapid Spanning Tree (RSTP) • IEEE 802.1x RADIUS Network Access Control • IEEE 802.3az Energy Efficient Ethernet (EEE) Compliant	
MANAGEMENT		
Password management	Yes	
Configurable management VLAN	Yes	
Admin access control via RADIUS and TACACS+	Yes	
IPv6 management	Yes	
SNTP client over UDP port 123	Yes	
SNMP v1/v2c	Yes	
SNMP v3 with multiple IP addresses	Yes	
RMON group 1,2,3,9	Yes	
Port mirroring	Yes	
Many-to-one port mirroring	12	8
Web-based graphical user interface (GUI)	Yes	
Smart Control Center (SCC) for multi-switch management	Yes	
Dual software (firmware) image	Yes	
Dual configuration file	Yes	
Cable test utility	Yes	
SSL/HTTPS Web-based access (version)	Yes (v3)	No
TLS Web-based access (version)	Yes (v1.0)	Yes (v1.0 ~ v1.2)
File transfers (uploads, downloads)	TFTP / HTTP	
HTTP upload/download (firmware)	Yes	
Syslog (RFC 3164)	Yes	
USB port for firmware and config upload/download	n/a	Yes
LEDS		
Per port	Speed, Link, Activity	
Per device	Power and Fan	
PHYSICAL SPECIFICATIONS		
Dimensions (W x D x H)	440 x 257 x 43 mm (17.3 x 10.1 x 1.7 in)	440 x 310 x 43 mm (17.3 x 12.2 x 1.7 in)
Weight	4.04 kg (8.9 lb)	5.04 kg (11.1 lb)

Technical Specifications

PRODUCT	XS712T	XS728T
POWER CONSUMPTION		
Worst case, all ports used, line-rate traffic	98.2W	173.3W
Energy Efficient Ethernet (EEE) IEEE 802.3az compliant	Yes	
Auto-EEE mode	Yes (deactivated by default)	
Power back-off	Drops power consumption by 15% to 20% when short copper cables are detected	
Fan	2	4
ENVIRONMENTAL SPECIFICATIONS		
Operating		
Operating temperature	0° to 50°C (32° to 122°F)	
Humidity (relative)	90% maximum relative humidity (RH), non-condensing	
Altitude	10,000ft (3,000m) maximum	
Storage		
Storage temperature	–40° to 70°C (–40° to 158°F)	–20° to 70°C (–4° to 158°F)
Humidity (relative)	95% maximum relative humidity, non-condensing	
Altitude	10,000ft (3,000m) maximum	
ELECTROMAGNETIC EMISSIONS AND IMMUNITY		
Certifications	CE mark, commercial	
	FCC Part 15 Class A, VCCI Class A	
	Class A EN 55022 (CISPR 22) Class A	
	Class A C-Tick	
	EN 55024	
	CCC	
SAFETY		
Certifications	CE mark, commercial	
	CSA certified (CSA 22.2 #950)	
	UL listed (UL 1950)/cUL IEC 950/EN 60950	
	CCC (China Compulsory Certificate)	
WARRANTY AND SUPPORT		
ProSAFE Lifetime Warranty	Included, Lifetime*	
Lifetime 24x7 Online Technical Support*	Included, Lifetime*	
Lifetime Next-Business-Day (NBD) Replacement	Included, Lifetime*	
ProSUPPORT OnCall 24x7, Category 2** Service Packs	PMB0312 (1 yr.) PMB0332 (3 yrs.) PMB0352 (5 yrs.)	

Ordering Information

PACKAGE CONTENT	
All Models	ProSAFE® 10-Gigabit Ethernet (10GbE) Smart Managed Switch
	Power cord
	Rack-mounting kit
	Rubber footpads for tabletop installation
	Quick install guide
	Resource CD with links to online documentation, installation guides, Web-management user manual, Smart Control Center (SCC) software and User's Guide.
ORDERING INFORMATION	
XS712T-100NES	North America, Latin America and Europe
XS712T-100AJS	Asia Pacific and Australia
XS712T-100PRS	China
XS728T-100NES	North America, Latin America and Europe
XS728T-100AJS	Asia Pacific and Australia
XS728T-100PRS	China
OPTIONAL MODULES AND ACCESSORIES	
AXM761-10000S	SFP+ Transceiver 10GBASE-SR (Short range, multimode)
AXM762-10000S	SFP+ Transceiver 10GBASE-LR (Long range, single mode)
AXM763-10000S	SFP+ Transceiver 10GBASE-LRM (Long range, multimode)
AXM764-10000S	SFP+ Transceiver 10GBASE-LR Lite (Long range lite, single mode)
AGM731F-10000S	SFP Transceiver 1000BASE-SX (Short range, multimode)
AGM732F-10000S	SFP Transceiver 1000BASE-LX (Long range, single mode)
AXC761-10000S	SFP+ DAC CABLE (1m)
AXC763-10000S	SFP+ DAC CABLE (3m)

starline® Computer GmbH
Carl-Zeiss-Str. 27-29 • D-73230 Kirchheim / Teck
Tel. +49(0)7021-487 200 • Fax +49(0)7021-487 400
www.starline.de

* This product comes with a limited warranty that is valid only if purchased from a NETGEAR authorized reseller, and modifications to product may void the warranty; covers hardware, fans, and internal power supplies - not software or external power supplies; see http://www.netgear.com/about/warranty/ for details. Lifetime technical support includes basic phone support for 90 days from purchase date and lifetime online chat support when purchased from a NETGEAR authorized reseller.

** The NETGEAR OnCall 24x7 contract provides unlimited phone and email technical support for your networking product. For ProSAFE products purchased prior to 06/2014, also includes next business-day hardware replacement.

NETGEAR, the NETGEAR Logo, ProSUPPORT and ProSAFE are trademarks of NETGEAR, Inc. in the United States and/or other countries. Other brand names mentioned herein are for identification purposes only and may be trademarks of their respective holder(s). Information is subject to change without notice. © 2015 NETGEAR, Inc. All rights reserved.